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APPLICATION NO.	FI	LING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/020,310	1	2/12/2001	Thomas Schwengler	020366-080700US	020366-080700US 8412		
20350	7590	08/23/2005		EXAM	EXAMINER		
TOWNSEN TWO EMBA		TOWNSEND AT	PAYNE,	PAYNE, DAVID C			
EIGHTH FLO		COCENTER		ART UNIT	PAPER NUMBER		
		A 94111-3834		2638			

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.   Application No.   Applicant(s)   SCHWENGLER, THOMAS   Examiner   David C. Psyre   2538   The MAILING DATE of this communication appears on the cover sheet with the correspondence address Pariod for Repty   A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.   The patient be reply addressed before a less has highly complete on the cover sheet with the correspondence address Pariod for reply addressed before a less has highly complete on the continuation of the patient before the patient before a less has highly complete on the patient before the patient of the patient before the patient before a less has highly (S) days, a recy sheet with supplication of the correlation of the patient before a less has highly (S) days, a recy sheet with supplication to the correlation of the patient before a less sheet high (S) days, a recy sheet with supplication of the continuation of the patient before a less patient before a less patient before a less patients befo		<b>1</b>						
### Examiner ### Art Unit ### 2038  ### The MAILING DATE of this communication appears an the cover sheet with the correspondence address  ### Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  ### Examiner		Application No.	Applicant(s)					
David C, Payne  - The MAILING DATE of this communication appears on the cover sheet with the correspondence address - Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  He period for reply specified above is loss than thirty (30) days, and the period for reply specified and passes of the period of the period of the communication.  He period for reply specified and passes of the period of the communication.  He period for reply specified and passes of the period		10/020,310	SCHWENGLER, THOMAS					
- The MAILING DATE of this communication appears on the cover sheet with the correspondence address — Period for Repty  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  Examenso in time may be available under the provisors of 3°CR 1.30(a), in so event, however, may a reply be timely filled by the part of the reply specified above the text of the provisor of 3°CR 1.30(a), in so event, however, may a reply be timely filled in the part of the part of the reply specified above the text than firsty (50) days, a reply within the situationy rational reply and will explain the part of the p	Office Action Summary	Examiner	Art Unit					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  □ Statestand of stree may be arealable under the provisions of 37 GFR 1.136(a). In no event, however, may a reply be timely filled  □ If the period for may be period above. The maximum statutory period will apply and will expect SE(8) MONTHS from the mailing date of this communication of the period for may be specified above. The maximum statutory period will apply and will expect SE(8) MONTHS from the mailing date of this communication. Any period for may be specified above. The maximum statutory period will apply and will expect SE(8) MONTHS from the mailing date of this communication, even if timely filled, may reduce any control term adjustment. See 37 GFR 1.704(a).  Status  1) □ Responsive to communication(s) filled on 18 May 2005.  2a) □ This action is FINAL. 2b) □ This action is non-final:  3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 c.D. 11, 453 O.G. 213.  Disposition of Claims  4) □ Claim(s) 1.27 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) □ Claim(s) 1.27 is/are a pending in the application.  4a) Claim(s) 1.5.7.8, 1.6-24.26 and 27 is/are rejected.  7) □ Claim(s) 1.5.7.8, 1.6-24.26 and 27 is/are rejected.  7) □ Claim(s) 5 is/are objected to by the Examiner.  Application Papers  9 □ The specification is objected to by the Examiner.  10 □ The drawing(s) lifled on is/are: a) □ accepted or b) □ objected to by the Examiner.  Application Papers  9 □ The drawing(s) index on is/are: a) □ accepted or b) □ objected to by the Examiner.  Application Papers  9 □ The drawing(s) index on is/are: a) □ accepted or b) □ objected to by the Examiner.  Application Papers  9 □ The drawing(s) index on is/are: a) □ accepted or b) □ objected to by the Examiner.  Application Pape		David C. Payne	2638					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ② MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  Elementate of ten many be available under the provisions of 3° CFR 1.13(d), In no event, however, may a reply be timely filed the provision of 3° CFR 1.13(d), a reply within the satuloury minimum of thinky (50) days will be considered timely.  If the period for reply specified above is less than thinky (30) days, a reply within the satuloury princiviling (50) MONTHS from the retailing date of this communication.  Failure to reply whithin the set to estended period for reply will provide the provision of the provision		ppears on the cover sheet with the c	orrespondence ad	ldress				
THE MAILING DATE OF THIS COMMUNICATION.  Extensions of time may be paralled under the provisions of 3°CFR 1136s). In on event, however, may a reply be timely filed after GX (6) MCMT1SF from the mailing date of this communication.  A policy of the provision of t								
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Application/Control Number: 10/020,310 Page 2

Art Unit: 2638

### **DETAILED ACTION**

## Response to Arguments

 Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

## Claim Rejections - 35 USC § 103

- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- Claims 1-3, 7, 8, 16-18, 20-22, 24, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raj et al. US 20020154354 A1 (Raj) in view of Mori et al. US 6711314 B1 (Mori).
   Re claim 1, 16 and 20, Raj disclosed

A system/method of communicating information between processors in a multiple processor system.

Each processor includes a transmitter and a receiver, see e.g. page 1, ¶ 0015. Each processor communicates optically with one other processor in the system at a time, see e.g. page 1, ¶ 0016.

The processors communicate with other processors over a known time slot, see e.g. page 2, ¶ 0023.

The system includes a time-dividing device (MEMS switch, shown in Figure 4, 112) which is used to bend the signal at different angles (page 4, ¶ 0046) toward given receivers, see e.g. page 3, ¶ 0035. Furthermore, Raj uses codes and wavelengths to only send information that is destined for a

Raj is not expressly clear as to the nature of the optical signal and the plurality of section corresponding to time slots and how they relate to receivers.

receiver to that receiver, page 2, ¶ 0026.

Mori disclosed a MEMS switch that operates according to a time-division manner making pair-wise

Application/Control Number: 10/020,310

Art Unit: 2638

connections, see e.g., Mori col. 16, lines: 33-55, as well as a timing diagram of the control switching method, see Figure 22. It would have been obvious to one of ordinary skill in the art at the time of invention to use the MEMS switch in Raj in time-division manner as does Mori, since the outputs are all arranged along a row/column order, each receiver can thus be assigned a specific time slot which coincides with a specific row column appearance, and furthermore each receiver will be found connected to only one output.

Re claim 2, 17 and 21, the modified invention of Raj and Mori disclosed further comprising an end device (processor, see Raj page 2, ¶ 0026), wherein the bent optical signal is transmitted to the end device from the receiver.

Re claim 3, the modified invention of Raj and Mori disclosed wherein the optical transmitter comprises a laser (see Raj page 1, ¶ 0015).

Re claims 7, 8, 18 and 22, the modified invention of Raj and Mori disclosed wherein the time-dividing device comprises a rotating mirror/ optical switching device, see Raj 112 of Figure 4.

Re claims 24, 26 and 27, the modified invention of Raj and Mori is silent regarding whether the section of the bent optical signal received includes substantially the entire full optical signal transmitted from the optical transmitter. However, it would have been obvious to one of ordinary skill in the art at the time of invention that a mirror typically reflects virtually all of an optical signal unless it is specified as a partially reflecting mirror based on convention in the art.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raj et al. US 20020154354 A1 (Raj) and Mori et al. US 6711314 B1 (Mori) as applied to claim 1 above, and in further view of Hui et al. US 6438148 B1 (Hui).

Application/Control Number: 10/020,310 Page 4

Art Unit: 2638

Re claims 4, 5, the modified invention of Raj and Mori fails to disclose wherein the optical transmitter comprises a microwave / radio frequency source.

Hui disclosed an microwave radio frequency source for an optical transmitter, **see Hui col. 4 lines 65-67**; **col. 5 lines 1-10**. It would have been obvious to one of ordinary skill in the art at the time of invention to use a microwave source in the modified invention. One is motivated as such since microwave sub-harmonic modulation provides frequency stabilization and phase locking of the beat signals for lasers effectively reducing frequency jitter and phase noise of the beat signals, **as discussed in Hui, see col. 5 lines 5-10**.

5. Claims 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raj et al. US 20020154354 A1 (Raj) and Mori et al. US 6711314 B1 (Mori) as applied to claims 16 and 20 above, and in further view of Pepper US 6760512 B2 (Pepper).

Re claims 19 and 23, the modified invention of Raj and Mori fails to disclose wherein the bending the optical signal comprises refracting the optical signal. Pepper disclosed using a wave guiding layer (see Pepper, 610 of Figure 6) which provides control over refraction of a signal (see Pepper, col. 9 lines 64-67, col. 10 lines 1-5) along with a MEMS array to steer beams of light. It would have been obvious to one of ordinary skill in the art at the time of invention to use the refractive layer along with the MEMS switch in the modified invention to provide a uniform delay response across all the MEMS switches, as discussed in Pepper, see col. 9 lines 35-67.

### Allowable Subject Matter

- Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if
  rewritten in independent form including all of the limitations of the base claim and any intervening
  claims.
- 7. Claims 9-15 and 25 are allowed.

Application/Control Number: 10/020,310

Art Unit: 2638

#### Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/020,310

Art Unit: 2638

Dcp

David C. Payne Patent Examiner

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